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What is claimed:

1. A method of sequencing DNA fragments comprising: placing a DNA sample within a buffer in separation apparatus;

applying an electric field across the separation apparatus to create a

bias in the buffer such that the DNA sample migrates from one end of the apparatus to another end along a migration channel;

separating the DNA sample into fragments along the migration channel within the buffer;

detecting fluorescent light emitted from the fragments along the migration channel; and,

generating a full image of the separation apparatus and the separated DNA fragments based on the detecting.

- 2. The method of claim 1 wherein the buffer is a gel.
- 3. The method of claim 1 wherein the buffer is a polymer solution.

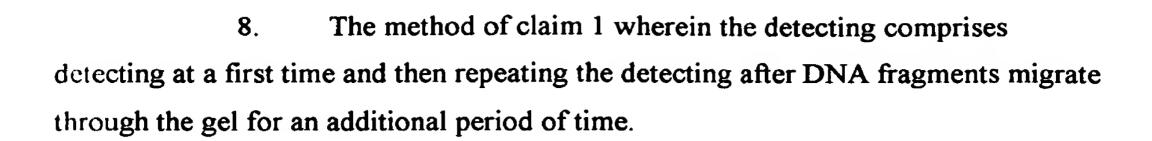
4. The method of claim 1 wherein the separation apparatus comprises at least one capillary tube.

- 5. The method of claim 1 wherein the separation apparatus comprises a set of glass plates with lithographically etched channels.
- 6. The method of claim 1 wherein the detecting comprises detecting using a full-width array scanner.
- 7. The method of claim 1 wherein the detecting comprises detecting using an amorphous silicon two-dimensional image sensor array.

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An apparatus for the sequencing of DNA comprising:
a separation apparatus operative to receive a DNA sample and
facilitate migration and separation into fragments of the DNA sample along a
migration channel within the apparatus;

a detector operative to detect light emitted the DNA fragments along the migration channels; and,

an image processor operative to generate image data representing a full image of the separation apparatus and the fragments.

10. The apparatus of claim 9 wherein the separation apparatus comprises:

at least one capillary tube;

a buffer; and,

a means for providing an electric field to create a bias between ends of the capillary tube.

11. The apparatus of claim 9 wherein the separation apparatus comprises:

a stacked pair of lithographically etched glass plates;

a buffer; and,

a means for providing an electric field to create a bias between ends of the glass plates.

- 12. The apparatus of claim 9 wherein the detector is a full-width array scanner.
- 13. The apparatus of claim 9 wherein the detector is a large area two-dimensional amorphous silicon image sensor array.

14. A system for sequencing DNA fragments comprising:

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means for placing a DNA sample within a buffer in separation apparatus;

means for applying an electric field across the separation apparatus to create a bias in the buffer such that the DNA sample migrates from one end of the apparatus to another end along a migration channel;

means for separating the DNA sample into fragments along the migration channel within the buffer;

means for detecting fluorescent light emitted from the illumination fragments along the migration channel; and,

means for generating a full image of the separation apparatus and the separated DNA fragments based on the detecting.

- 15. The system of claim 14 wherein the detecting means comprises a full-width array scanner.
- 16. The system of claim 14 wherein the detecting means comprises an amorphous silicon two-dimensional image sensor array.
- 17. The system of claim 14 wherein the illumination means comprises a laser that illuminates perpendicular to the direction of migration of the DNA fragments.
- 18. The system of claim 14 wherein the illumination means comprises a laser that illuminates along the direction of migration of the DNA fragments.
- 19. The system of claim 14 wherein the illumination means comprises a light emitting diode bar.
- 20. The system of claim 14 wherein the illumination means comprises a laser attached to the rear of the detector.

